

## P. ENT COOPERATION TREA

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
US Department of Commerce  
United States Patent and Trademark  
Office, PCT  
2011 South Clark Place Room  
CP2/5C24  
Arlington, VA 22202  
ETATS-UNIS D'AMERIQUE  
in its capacity as elected Office

<b>Date of mailing</b> (day/month/year) 23 April 2001 (23.04.01)	
<b>International application No.</b> PCT/SE00/01567	<b>Applicant's or agent's file reference</b> PCT 51547 SI/MW
<b>International filing date</b> (day/month/year) 10 August 2000 (10.08.00)	<b>Priority date</b> (day/month/year) 10 August 1999 (10.08.99)
<b>Applicant</b> DANIELSSON, Niklas	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
22 February 2001 (22.02.01)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<b>The International Bureau of WIPO</b> 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	<b>Authorized officer</b> Claudio Borton Telephone No.: (41-22) 338.83.38
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# RECORD COPY

# PCT

## REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

\* Title change! See ISR

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**PCT/SE 00 / 0 1 5 6 7**

International Application No.

International Filing Date:

**10 -08- 2000**

Name of receiving Office and "PCT International Application"

**The Swedish Patent Office**

Applicant's or agent's file reference

(if desired) (12 characters maximum) **PCT 51547 SI/MW**

Box No. I

TITLE OF INVENTION

**COMPUTER DEVICE** \*

Box No. II

APPLICANT

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

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☒ This person is also inventor.

Telephone No.

Facsimile No.

Teleprinter No.

State (that is, country) of nationality:  
**Sweden**

State (that is, country) of residence:  
**Sweden**

This person is applicant for the purposes of:



all designated States



all designated States except the United States of America



the United States of America only



the States indicated in the Supplemental Box

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

This person is:

☐ applicant only

☐ applicant and inventor

☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

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This person is applicant for the purposes of:



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☐ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:



agent



common representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

**BJERKENS PATENTBYRÅ KB, represented by  
BERGLUND, Stefan; ISRAELSSON, Stefan;  
BJERKÉN, Håkan or OLSSON, Jan**

**Östermalmsgatan 58  
SE-114 50 Stockholm, SWEDEN**

Telephone No.

**08 - 662 08 70**

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**08 - 663 02 60**

Teleprinter No.

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

## Box No. V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes; at least one must be marked):

## Regional Patent

- ☒ AP ARIPO Patent: GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SL Sierra Leone, SZ Swaziland, TZ United Republic of Tanzania, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
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- ☒ EP European Patent: AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☒ OA OAPI Patent: BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line)

National Patent (if other kind of protection or treatment desired, specify on dotted line):

- |                                                                              |                                                                                  |
|------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> AE United Arab Emirates                  | <input checked="" type="checkbox"/> LR Liberia                                   |
| <input checked="" type="checkbox"/> AL Albania                               | <input checked="" type="checkbox"/> LS Lesotho                                   |
| <input checked="" type="checkbox"/> AM Armenia                               | <input checked="" type="checkbox"/> LT Lithuania                                 |
| <input checked="" type="checkbox"/> AT Austria                               | <input checked="" type="checkbox"/> LU Luxembourg                                |
| <input checked="" type="checkbox"/> AU Australia                             | <input checked="" type="checkbox"/> LV Latvia                                    |
| <input checked="" type="checkbox"/> AZ Azerbaijan                            | <input checked="" type="checkbox"/> MA Morocco                                   |
| <input checked="" type="checkbox"/> BA Bosnia and Herzegovina                | <input checked="" type="checkbox"/> MD Republic of Moldova                       |
| <input checked="" type="checkbox"/> BB Barbados                              | <input checked="" type="checkbox"/> MG Madagascar                                |
| <input checked="" type="checkbox"/> BG Bulgaria                              | <input checked="" type="checkbox"/> MK The former Yugoslav Republic of Macedonia |
| <input checked="" type="checkbox"/> BR Brazil                                | <input checked="" type="checkbox"/> MN Mongolia                                  |
| <input checked="" type="checkbox"/> BY Belarus                               | <input checked="" type="checkbox"/> MW Malawi                                    |
| <input checked="" type="checkbox"/> CA Canada                                | <input checked="" type="checkbox"/> MX Mexico                                    |
| <input checked="" type="checkbox"/> CH and LI Switzerland and Liechtenstein  | <input checked="" type="checkbox"/> NO Norway                                    |
| <input checked="" type="checkbox"/> CN China                                 | <input checked="" type="checkbox"/> NZ New Zealand                               |
| <input checked="" type="checkbox"/> CR Costa Rica                            | <input checked="" type="checkbox"/> PL Poland                                    |
| <input checked="" type="checkbox"/> CU Cuba                                  | <input checked="" type="checkbox"/> PT Portugal                                  |
| <input checked="" type="checkbox"/> CZ Czech Republic and utility model      | <input checked="" type="checkbox"/> RO Romania                                   |
| <input checked="" type="checkbox"/> DE Germany and utility model             | <input checked="" type="checkbox"/> RU Russian Federation                        |
| <input checked="" type="checkbox"/> DK Denmark and utility model             | <input checked="" type="checkbox"/> SD Sudan                                     |
| <input checked="" type="checkbox"/> DM Dominica                              | <input checked="" type="checkbox"/> SE Sweden                                    |
| <input checked="" type="checkbox"/> EE Estonia and utility model             | <input checked="" type="checkbox"/> SG Singapore                                 |
| <input checked="" type="checkbox"/> ES Spain                                 | <input checked="" type="checkbox"/> SI Slovenia                                  |
| <input checked="" type="checkbox"/> FI Finland and utility model             | <input checked="" type="checkbox"/> SK Slovakia and utility model                |
| <input checked="" type="checkbox"/> GB United Kingdom                        | <input checked="" type="checkbox"/> SL Sierra Leone                              |
| <input checked="" type="checkbox"/> GD Grenada                               | <input checked="" type="checkbox"/> TJ Tajikistan                                |
| <input checked="" type="checkbox"/> GE Georgia                               | <input checked="" type="checkbox"/> TM Turkmenistan                              |
| <input checked="" type="checkbox"/> GH Ghana                                 | <input checked="" type="checkbox"/> TR Turkey                                    |
| <input checked="" type="checkbox"/> GM Gambia                                | <input checked="" type="checkbox"/> TT Trinidad and Tobago                       |
| <input checked="" type="checkbox"/> HR Croatia                               | <input checked="" type="checkbox"/> TZ United Republic of Tanzania               |
| <input checked="" type="checkbox"/> HU Hungary                               | <input checked="" type="checkbox"/> UA Ukraine                                   |
| <input checked="" type="checkbox"/> ID Indonesia                             | <input checked="" type="checkbox"/> UG Uganda                                    |
| <input checked="" type="checkbox"/> IL Israel                                | <input checked="" type="checkbox"/> US United States of America                  |
| <input checked="" type="checkbox"/> IN India                                 | <input checked="" type="checkbox"/> UZ Uzbekistan                                |
| <input checked="" type="checkbox"/> IS Iceland                               | <input checked="" type="checkbox"/> VN Viet Nam                                  |
| <input checked="" type="checkbox"/> JP Japan                                 | <input checked="" type="checkbox"/> YU Yugoslavia                                |
| <input checked="" type="checkbox"/> KE Kenya                                 | <input checked="" type="checkbox"/> ZA South Africa                              |
| <input checked="" type="checkbox"/> KG Kyrgyzstan                            | <input checked="" type="checkbox"/> ZW Zimbabwe                                  |
| <input checked="" type="checkbox"/> KP Democratic People's Republic of Korea |                                                                                  |
| <input checked="" type="checkbox"/> KR Republic of Korea                     |                                                                                  |
| <input checked="" type="checkbox"/> KZ Kazakhstan                            |                                                                                  |
| <input checked="" type="checkbox"/> LC Saint Lucia                           |                                                                                  |
| <input checked="" type="checkbox"/> LK Sri Lanka                             |                                                                                  |

Check-boxes reserved for designating States which have become party to the PCT after issuance of this sheet:

- ☐ .....  
☐ .....

**Precautionary Designation Statement:** In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation (including fees) must reach the receiving Office within the 15-month time limit.)

2000-08-10

<b>Box No. VI PRIORITY CLAIM</b>		<input type="checkbox"/> Further priority are indicated in the Supplemental Box.		
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country	regional application: regional Office	international application: receiving Office
item (1) 10/8/1999	9902869-8	Sweden		
item (2)				
item (3)				

☒ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s): (1)

\* Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.

**Box No. VII INTERNATIONAL SEARCHING AUTHORITY**

**Choice of International Searching Authority (ISA)**  
(if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):

ISA / SE

**Request to use results of earlier search:** reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):

Date (day/month/year)

Number

Country (or regional Office)

**Box No. VIII CHECK LIST; LANGUAGE OF FILING**

This international application contains the following number of sheets:

request : 3 ✓  
description (excluding sequence listing part) : 12 ✓  
claims : 3 ✓  
abstract : 1 ✓  
drawings : 3 ✓  
sequence listing part of description :  
Total number of sheets : 22

This international application is accompanied by the item(s) marked below:

1. ☒ fee calculation sheet
2. ☒ separate signed power of attorney
3. ☐ copy of general power of attorney; reference number, if any:
4. ☐ statement explaining lack of signature
5. ☐ priority document(s) identified in Box No. VI as item(s):
6. ☐ translation of international application into (language):
7. ☐ separate indications concerning deposited microorganism or other biological material
8. ☐ nucleotide and/or amino acid sequence listing in computer readable form
9. ☐ other (specify):

**Figure of the drawings which should accompany the abstract:** Fig 2

**Language of filing of the international application:** Swedish

**Box No. IX SIGNATURE OF APPLICANT OR AGENT**

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

Stockholm, August 8, 2000

BJERKENS PATENTBYRÅ KB

Stefan Israelsson

For receiving Office use only		2. Drawings: <input checked="" type="checkbox"/> received: <input type="checkbox"/> not received:
1. Date of actual receipt of the purported international application:	10-08-2000	
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:		
4. Date of timely receipt of the required corrections under PCT Article 11(2):		
5. International Searching Authority (if two or more are competent): ISA / SE	6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid.	

Date of receipt of the record copy by the International Bureau:

05 SEP 2000

(05.09.00)

1/ 3

8

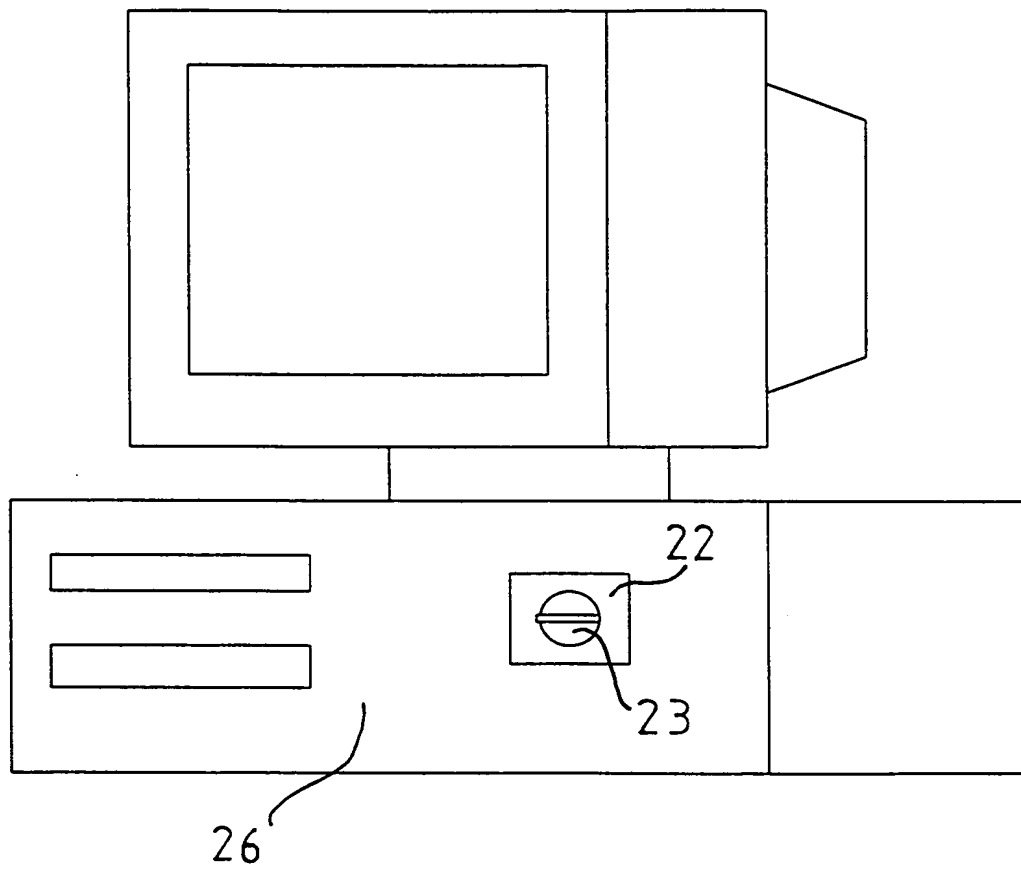


FIG 1

2/3

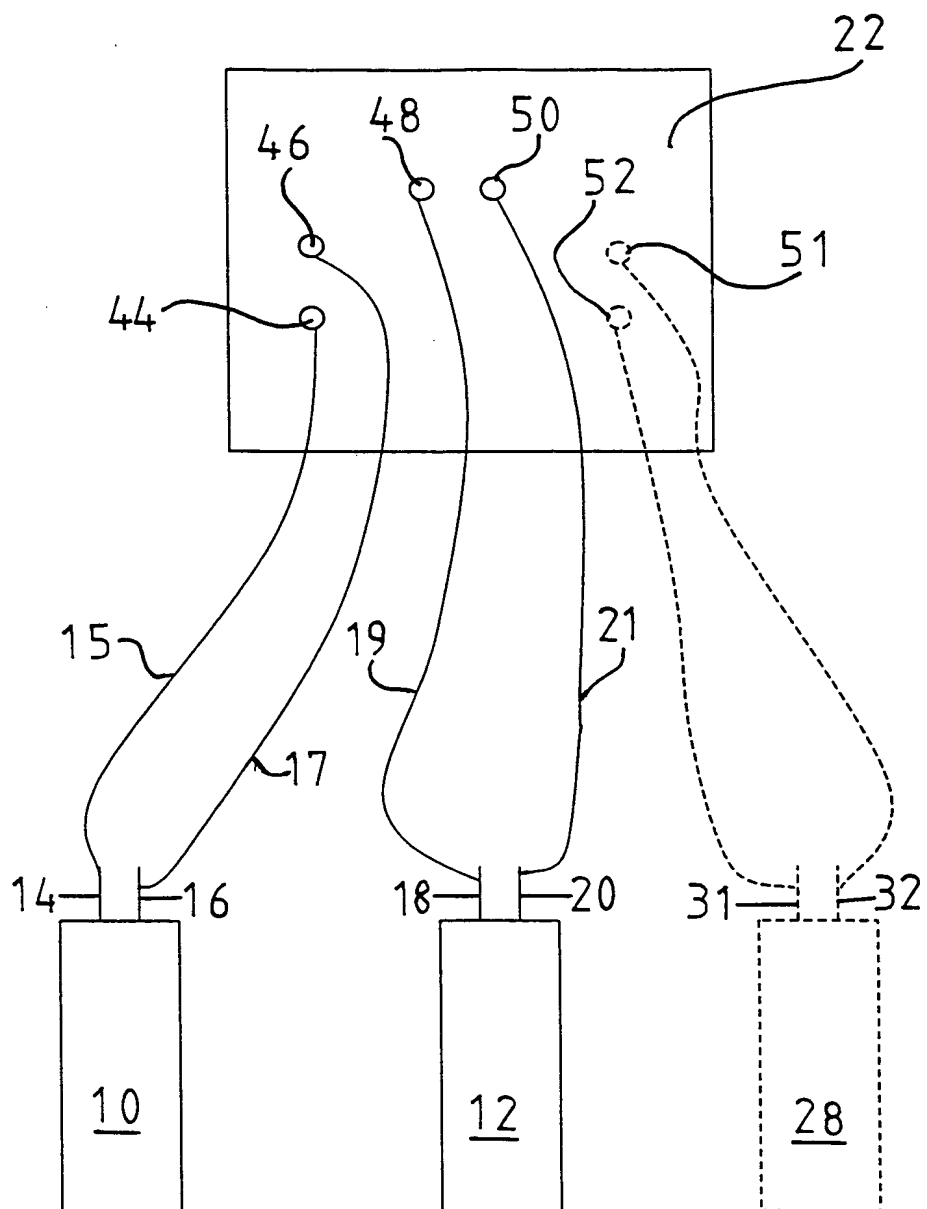


FIG 2

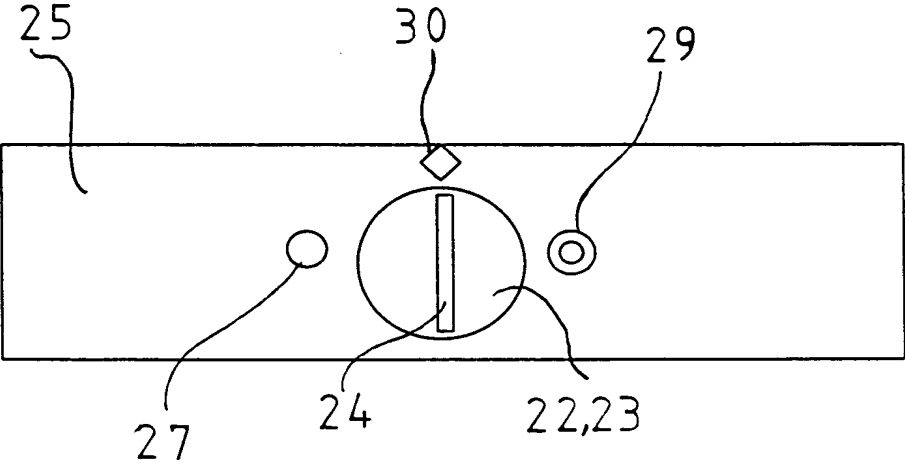


FIG 3

5

## **Datoranordning**

### **UPPFINNINGENS BAKGRUND OCH TIDIGARE TEKNIK**

- 10 Föreliggande uppfinning avser en datoranordning innefattande:  
åtminstone två minnesenheter,  
varvid var och en av dessa minnesenheter innefattar åtminstone  
två kontaktytor och är av den typ vars funktion i datoranordning-  
en åtminstone delvis bestäms av huruvida elektrisk förbindelse  
15 föreligger mellan dessa två kontaktytor hos minnesenheten, och  
åtminstone en manuellt manövrerbar omkopplingsanordning som  
medger inställning för slutning och brytning av åtminstone en  
förbindelse.
- 20 En sådan tidigare känd datoranordning kan till exempel vara en  
persondator (PC). En sådan PC innefattar ibland till exempel två  
hårddiskenheter som alltså bildar två minnesenheter. Den ena  
hårddiskenheten kan till exempel fungera som master och den  
andra hårddiskenheten kan fungera som slave. Hårddisken-  
25 heterna är ofta av den typ som innefattar ett flertal kontaktstift  
som kan förbindas två och två med hjälp av en bygel (s k jum-  
per). Genom att förbinda två förutbestämda stift med en bygel  
kan en hårddiskenhet exempelvis definieras som master. När en  
datoranordning innefattar två sådana hårddiskenheter är därför  
30 ofta den ena definierad som master och den andra som slave  
med hjälp av nämnda byglar. Vidare innefattar en datoran-  
ordning ibland en omkopplingsanordning som medger inställning  
för slutning och brytning av en förbindelse med hjälp av en  
nyckel. Den förbindelse som kan slutas och brytas kan därvid  
35 helt enkelt utgöras av nätspänningen till datoranordningen.



Detta innebär att den som inte har tillgång till nyckeln ej kan starta eller använda datoranordningen.

- 5 En datoranordning med två hårddiskenheter är känd genom dokumentet CA 2 197 502. Dokumentet beskriver en datoranordning med en omkopplare. Med omkopplaren kan väljas vilken av de båda hårddiskenheterna som ska inkopplas. Den andra hårddiskenheten kan därvid ej användas. För omkopplingen kan en eller två nycklar användas. Omkopplingsanordningen är relativt komplicerad och innefattar en krets som är ansluten till datoranordningens gemensamma kontroll- och adressledning samt till två stycken tristate buffrar. Dessa buffrar är i sin tur anslutna till hårddiskenheterna via två anpassningskretsar.
- 10
- 15 Dokumentet US-A-5 434 562 beskriver en datoranordning som kan ha ett flertal anslutna perifera enheter. Dokumentet beskriver flera olika sätt på vilka en användare kan ha tillgång till de olika enheterna. I det enklaste fallet avgörs tillgång till en enhet genom brytning eller slutning av drivspänning. I andra fall används en mer komplicerad krets för att påverka olika styrsignaler till eller från en styrenhet (controller).
- 20

De ovan beskrivna anordningarna är således antingen relativt komplicerade eller använder sig enbart av omkoppling av strömförsörjning eller drivspänning.

25

Det finns ett behov att på ett enkelt sätt kunna definiera en minnesenhets funktion i en dator. Exempelvis kan det vara så att till exempel barn i en familj använder en dator i föräldrarnas frånvaro. Därmed kan barnen genom sin lek förorsaka problem i program som finns lagrade på hårddisken. Genom de program som barnen använder kan exempelvis virus eller liknande infektera hårddisken. Det kan således vara önskvärt att hindra otillbörliga, exempelvis barnen, från att utnyttja åtminstone en viss hårddisk i datorn.

30

35

## SAMMANFATTNING AV UPPFINNINGEN

Ändamålet med föreliggande uppfinning är att åstadkomma en  
5 datoranordning som med en mycket enkel konstruktion möjliggör  
omkoppling av minnesenheter som ingår i datoranordning. Ex-  
empelvis kan det vara fördelaktigt om olika användare av dator-  
anordningen använder olika minnesenheter. En fördel med före-  
liggande uppfinning är att därvid utnyttjas de kontaktytor som  
10 redan finns på minnesenheterna.

Ändamålet med uppfinningen uppnås med den inledningsvis de-  
finierade dataanordningen som är kännetecknad av att nämnda  
omkopplingsanordning är förbunden med de två kontaktytorna  
15 hos åtminstone en första av minnesenheterna, så att den elekt-  
risk förbindelsen mellan de två kontaktytorna hos nämnda första  
minnesenhet är brytbar och slutbar med omkopplingsanord-  
ningen, varvid nämnda funktion av nämnda första minnesenhet  
bestäms av om omkopplingsanordningen är inställd för slutning  
20 eller brytning av den elektriska förbindelsen mellan de två kon-  
taktytorna hos nämnda första minnesenhet. Omkopplingsanord-  
ningen styr således direkt slutning och brytning av förbindelsen  
mellan de kontaktytor som finns på minnesenheten. Därvid be-  
hövs ej några komplicerade kretsar mellan omkopplingsanord-  
25 ningen och kontaktytorna hos minnesenheten. Företrädesvis är  
således omkopplingsanordningen direkt förbunden med nämnda  
kontaktytor utan att det finns någon ytterligare krets emellan  
omkopplingsanordningen och kontaktytorna.

30 Enligt en utföringsform av uppfinningen innefattar nämnda om-  
kopplingsanordning en låsanordning som begränsar möjligheten  
för en användare av dataanordningen att inställa omkopplings-  
anordningen för slutning eller brytning. Härigenom möjliggörs att  
endast den som har tillgång till låsanordningen kan bestämma  
35 huruvida slutning eller brytning mellan kontaktytorna ska förelig-  
ga.

Enligt en ytterligare utföringsform av uppfinningen är nämnda låsanordning utformad att manövreras medelst en nyckel. Endast den som har tillgång till nyckeln kan således omkoppla omkopplingsanordningen. Istället för en nyckel är det även tänkbart att utforma låsanordningen med någon slags kod.

Enligt ännu en utföringsform av uppfinningen är nämnda omkopplingsanordning även förbunden med de två kontaktytorna hos en andra av de åtminstone två minnesenheter, så att den elektriska förbindelsen mellan de två kontaktytorna hos den andra minnesenheten är brytbar och slutbar med omkopplingsanordningen, varvid omkopplingsanordningen är utformad att innefatta åtminstone ett första och ett andra inställningsläge, varvid vid det första inställningsläget den elektriska förbindelsen mellan de nämnda två kontaktytorna hos den första minnesenheten är slutna, och varvid vid det andra inställningsläget den elektriska förbindelsen mellan de nämnda två kontaktytorna hos den andra minnesenheten är slutna. De två kontaktytorna hos respektive minnesenhet kan därvid exempelvis definiera vilken av minnesenheter som ska vara inkopplad och som kan användas i datoranordningen. När omkopplaren är inställd enligt ett första inställningsläge kan således den första minnesenheten användas. När omkopplingsanordningen är inställd med ett andra inställningsläge kan den andra minnesenheten användas.

Enligt ännu en utföringsform av uppfinningen är nämnda låsanordningen inrättad så att nämnda första och andra inställningsläge innefattar två olika låspositioner inställbara med hjälp av nämnda nyckel. Detta innebär att den som har tillgång till nyckeln kan välja vilken av de olika inställningslägena som omkopplingsanordningen skall ställas in på. Till exempel när föräldrarna lämnar datoranordningen kan de med hjälp av nyckeln ställa in omkopplingsanordningen så att endast en viss minnesenhet kan användas. Barnen kan sedan fritt använda datoranordningen och ha åtkomst till denna minnesenhet. En annan minnesenhet,

som vanligen föräldrarna använder, har barnen därvid inte tillgång till.

5 Enligt en ytterligare utföringsform av uppfinningen är omkopplingsanordningen utformad att innefatta åtminstone även ett ytterligare inställningsläge, varvid i detta ytterligare inställningsläge den elektriska förbindelsen mellan de två respektive kontaktytorna med vilka omkopplingsanordningen är förbunden, är bruten hos samtliga minnesenheter till vilka omkopplingsanordningen är ansluten. Med omkopplingsanordningen inställd i 10 detta ytterligare inställningsläge kan bootning förhindras från samtliga minnesenheter. När till exempel låsanordningen är utformad att manövreras med en nyckel så betyder detta att den som ej har tillgång till nyckeln ej kan använda datoranordningen om omkopplingsanordningen är inställd i detta ytterligare inställningsläge. 15

Enligt ännu en utföringsform av uppfinningen är nämnda första och andra minnesenheter hårddiskenheter. Därmed kan hårddiskenheternas funktion i datoranordningen bestämmas genom omkoppling med hjälp av omkopplingsanordningen. 20

Enligt en ytterligare utföringsform av uppfinningen utgörs nämnda två kontaktytor hos nämnda första och andra minnesenhet av två stift som är av den typ som är anordnade för att vara förbindbara med hjälp av en bygel. Sådana stift är exempelvis anordnade på hårddiskenheter. Dessa stift är därvid av standardtyp och kan förbindas med varandra med hjälp av en bygel (s k jumper). 25

30 Enligt ännu en utföringsform av uppfinningen innefattar datoranordningen åtminstone ett hölje, varvid nämnda omkopplingsanordning är anordnad vid höljet och utformad att kunnaställas från höljets utsida. Det är givetvis fördelaktigt om omkopplingsanordningen på ett enkelt sätt kan manövreras av en användare. 35

En fördelaktig placering av omkopplingsanordningen är således vid datoranordningens hölje.

- Enligt en ytterligare utföringsform av uppfinningen är datoranordningen inrättad så att inställning av omkopplingsanordningen i ett första läge medför att den första av nämnda minnesenheter är inkopplad för användning i datoranordningen medan den andra minnesenheten ej är inkopplad för användning. Lämpligtvis, men ej nödvändigtvis, är datoranordningen även inrättad så att inställning av omkopplingsanordningen i ett andra läge medför att den andra minnesenheten är inkopplad för användning medan den första minnesenheten är bortkopplad och således ej kan användas.
- Enligt ännu en utföringsform av uppfinningen är datoranordningen inrättad så att inställning av omkopplingsanordningen i ett första läge medför att både den första och den andra minnesenheten är inkopplade för användning i datoranordningen, varvid den första minnesenheten fungerar som master och den eller de andra minnesenheterna fungerar som slave. Företrädesvis kan omkopplingsanordningen även härvid innefatta ett andra läge, där likaledes både den första och den andra minnesenheten är inkopplade för användning i datoranordningen, men där den andra minnesenheten fungerar som master och den första minnesenheten fungerar som slave. Lämpligtvis kan datoranordningen inrättas på detta sätt genom att omkopplingsanordningen är förbunden med förutbestämda kontaktytor hos minnesenheterna samt genom att det har definierats i datorns set-up att den ena minnesenheten fungerar som master och den andra som slave.

#### KORT BESKRIVNING AV RITNINGARNA

- Föreliggande uppfinning skall nu förklaras med hjälp av en såsom exempel beskriven utföringsform och med hänvisning till de bifogade ritningarna.

- Fig 1 visar schematiskt en datoranordning enligt uppfinningen.
- Fig 2 visar likaledes schematiskt en omkopplingsanordning förbunden med minnesenheter.
- Fig 3 visar schematiskt ett exempel på omkopplingsanordningen sedd framifrån.

## 10 DETALJERAD BESKRIVNING AV EN UTFÖRINGSFORM AV UPPFINNINGEN

Fig 1 visar schematiskt en datoranordning 8. Datoranordningen 8 är i detta fall en persondator (PC), men även andra typer av datorer kan utformas i enlighet med föreliggande uppfinning.

15 Datoranordningen 8 innefattar ett hölje 26. En omkopplingsanordning 22 är anordnad vid höljet 26. Omkopplingsanordningen 22 kan således nås och inställas från höljets 26 utsida. Omkopplingsanordningen 22 innefattar en låsanordning 23. Låsanordningen 23 är i detta fall av den typ som manövreras med

20 hjälp av en nyckel 24. Låsanordningen 23 kräver således att en användare har tillgång till en nyckel 24 för att kunna inställa omkopplingsanordningen 22.

Fig 2 visar schematiskt två minnesenheter 10, 12. Dessa minnesenheter 10, 12 utgörs exempelvis av två hårddiskenheter 10, 12. Dessa hårddiskenheter 10, 12 är lämpligen anordnade innanför datoranordningens 8 hölje 26. Det är även möjligt att datoranordningen 8 innefattar mer än två hårddiskenheter 10, 12. En ytterligare sådan hårddiskenhet 28 är antydd med

30 streckad linje. Var och en av minnesenheterna 10, 12 innefattar åtminstone två kontaktytor 14, 16 respektive 18, 20. Dessa kontaktytor 14, 16, 18, 20 utgörs företrädesvis av två stift som är av den typ som är anordnade för att vara förbindbara med hjälp av en bygel (s k jumper). Sådana stift 14, 16, 18, 20 är oftast av en standardtyp och en minnesenhet är vanligtvis utrustad

35 med flera sådana par av stift 14, 16, 18, 20 som är förbindbara

- med en bygel. Genom att förbinda ett visst par av sådana stift 14, 16 kan exempelvis definieras att minnesenheten 10 utgör masterenhet i datoranordningen 8. Andra par av stift kan definiera andra funktioner hos minnesenheten i fråga. Den antydda
- 5 minnesenheten 28 har också åtminstone ett sådant par av stift 31, 32. Minnesenhetens 10, 12, 28 funktion i datoranordningen 8 bestäms således åtminstone delvis av huruvida elektrisk förbindelse föreligger mellan de två kontaktytorna 14, 16; 18, 20; 31, 32.
- 10 Vidare kan även definieras i datoranordningens 8 set-up vilken funktion en viss minnesenhet 10, 12, 28 har i datoranordningen 8 när förutbestämda stift är förbundna med varandra. Exempelvis kan därmed datoranordningen 8 vara inrättad så att om för-
- 15 utbestämda stift på en viss minnesenhet är förbundna med varandra så är minnesenheten i fråga inkopplad för användning i datoranordningen medan den eller de andra minnesenheterna är bortkopplade och således ej kan användas. Alternativt kan i datorns set-up definieras att en viss minnesenhet, när förutbestämda stift hos denna minnesenhet är förbundna med varandra,
- 20 fungerar som master och de andra minnesenheterna fungerar som slave. Detta innebär bl a att bootning av datoranordningen 8 sker från den minnesenhet som fungerar som master.
- 25 Datoranordningen 8 innefattar även en omkopplingsanordning 22. Omkopplingsanordningen 22 kan vara exempelvis av en s k nyckelströmställartyp. Detta innebär att omkopplingsanordningen 22 är manövrerbar med hjälp av nyckeln 24. I Fig 2 visas schematiskt hur en sådan omkopplingsanordning 22 kan fungera. Omkopplingsanordningen 22 innefattar ett flertal poler 42, 46, 48, 50, 51, 52. Dessa poler är enligt denna utföringsform anordnade i par (med ett par av poler menas i denna ansökan två kontakteringsytor hos omkopplingsanordningen mellan vilka förbindelse kan slutas eller brytas med omkopplingsanordningen).
- 30 Om nyckeln 24 är inställd i en viss position så är polerna 44 och 46 förbundna med varandra. Om nyckeln är inställd i en
- 35

i en andra position sluts förbindelsen mellan polerna 48 och 50. Omkopplingsanordningen 22 kan även innefatta ytterligare poler såsom är antytt med 51 och 52. Genom manuell inställning med hjälp av nyckeln 24 kan således omkopplingsanordningen 22 in-  
5 ställas för slutning och brytning av de olika paren av poler 44, 46; 48, 50; 51, 52.

De två polerna 44, 46 hos omkopplingsanordningen 22 är via ledningar 15, 17 förbundna med de två kontaktytorna 14, 16 hos  
10 en första 10 av minnesenheterna. Om låsanordningens 23 nyckel 24 är inställd i en första position som sluter förbindelsen mellan polerna 44 och 46 så sluts därmed också förbindelsen mellan stiften 14, 16 hos minnesenheten 10. Därmed bestäms  
15 den första minnesenhetens 10 funktion av huruvida omkopplingsanordningen 22 är inställd för slutning eller brytning av den elektriska förbindelsen mellan de två stiften 14, 16 hos minnesenheten 10. I uppfinningens enklaste utföringsform behövs endast förbindelseledningarna 15, 17 mellan omkopplingsanordningen 22 och en minnesenhet 10. Därmed kan således denna  
20 minnesenhet 10 inkopplas och urkopplas med hjälp av nyckeln 24.

Enligt den visade utföringsformen är polerna 48, 50 hos omkopplingsanordningen 22 förbundna via ledningar 19, 21 med  
25 stiften 18, 20 hos en andra minnesenhet 12. Därmed kan omkopplingsanordningen 22 med hjälp av nyckeln 24 inställas i ett andra läge där polerna 48, 50 är elektriskt förbundna med varandra. Detta innebär att stiften 18, 20 hos den andra minnesenheten 12 är förbundna med varandra. När nyckeln är inställd i  
30 detta läge är förbindelsen mellan polerna 44, 46 bruten och därmed är även förbindelsen mellan stiften 14, 16 bruten.

Genom inställning av nyckeln 24 i ett första läge kan således exempelvis endast minnesenheten 10 vara inkopplad medan  
35 minnesenheten 12 är urkopplad. Vid inställning av nyckeln 24 i ett andra läge kan minnesenheten 12 vara inkopplad medan



minnesenheten 10 är urkopplad. Alternativt kan den ena minnesenheten 10 i ett första läge fungera som master medan den andra minnesenheten 12 fungerar som slave och vice versa i ett andra inställningsläge. Omkopplingsanordningen 22 kan även  
5 innefatta ett ytterligare inställningsläge. Detta ytterligare inställningsläge kan vara sådant att när omkopplingsanordningen 22 är inställd i detta läge, så är förbindelsen bruten mellan de två stiften 14, 16; 18, 20 respektive 31, 32 hos samtliga minnesenheter 10, 12, 28 som är anslutna till omkopplingsanordningen  
10 22. Med omkopplingsanordningen 22 inställd i detta ytterligare läge kan exempelvis ingen bootning genomföras.

Fig 3 visar schematiskt hur omkopplingsanordningens 22 låsanordning 23 kan se ut för en användare av anordningen. Omkopplingsanordningen 22 kan lämpligtvis vara anordnad i ett  
15 hållarorgan 25. Detta hållarorgan 25 kan exempelvis vara anpassat att kunna anordnas i en standardposition i en dator. Anordningen kan vara försedd med ett första indikeringsmärke 27 och ett andra indikeringsmärke 29. De bägge indikeringsmärkena 27, 29 kan skilja sig åt genom att exempelvis ha olika  
20 färg, olika mönster eller innefatta olika symboler. För att tillåta enkel installation av omkopplingsanordningen 22 kan lämpligen ledningarna 15, 17 respektive 19, 21 (se Fig 2) vara utformade med motsvarande indikeringar som indikeringsmärkena 27, 29.  
25 Ledningarna 15, 17, som leder till en minnesenhet 10, kan ingå i en gemensam kabel eller kan vara hoptvinnade. Därvid kan denna kabel eller dessa ledningar 15,17 exempelvis innefatta en viss färg som motsvarar färgen hos det första indikeringsmärket 27. På motsvarande sätt kan ledningarna 19, 21 innefatta en  
30 annan färg som motsvarar färgen på det andra indikeringsmärket 29. Låsanordningen 23 kan även ha ett neutralt läge där nyckeln 24 är inställd såsom visas i Fig 3. Eventuellt kan ett tredje indikeringsmärke 30 utvisa detta neutrala läge. Detta neutrala läge kan exempelvis vara det ovan beskrivna ytterligare  
35 inställningsläget, i vilket förbindelsen är bruten mellan stiften 14, 16; 18, 20; 31, 32 hos samtliga minnesenheter 10, 12, 28.

När nyckeln 24 vrids till vänster, dvs mot det första indikeringsmärket 27, kortsluts lämpligen ledningarna 15, 17 som har motsvarande indikering som indikeringsmärket 27. Om nyckeln 24 vrids åt höger, dvs mot det andra indikeringsmärket 29, sluts  
5 lämpligen förbindelsen mellan ledningarna 19 och 21 som har motsvarande symbol som det andra indikeringsmärket 29.

Föreliggande uppfinning möjliggör en mycket enkel lösning till problemet att låsbart kunna definiera funktionen av en viss minnesenhet, exempelvis av en hårddiskenhet. Eftersom kontakt-  
10 ytorna, dvs stiften 14, 16, 18, 20, redan finns anordnade på hårddiskenheten behövs enligt uppfinningen endast dras ledningar 15, 17, 19, 21 från dessa stift 14, 16, 18, 20 till omkopplingsanordningen 22. Ingen ytterligare elektronik är nödvändig  
15 mellan stiften 14, 16, 18, 20 och omkopplingsanordningen 22.

Som ett exempel på tillämpning av uppfinningen kan nämnas att det kan förekomma att olika användare, exempelvis kollegor vid en arbetsplats, som använder samma dator, önskar använda oli-  
20 ka hårddiskenheter för att inte riskera att manipulera varandras program. Enligt uppfinningen kan således på ett enkelt sätt med hjälp av omkopplingsanordningen inställas vilken av hårddiskenheterna som ska vara inkopplad. De olika användarna kan därvid använda sina egna hårddiskar och riskerar därför inte att  
25 förorsaka några ändringar i vad som finns lagrat på de andra användarnas hårddiskar.

Föreliggande uppfinning är inte begränsad till den visade utföringsformen utan kan varieras och modifieras inom ramen för  
30 de efterföljande patentkraven. Såsom har beskrivits ovan är det möjligt att låsanordningen innefattar ett inställningsläge där ingen av minnesenheterna är inkopplingsbar. Vidare kan låsanordningen vara utformad att manövreras med olika nycklar som medger tillgång till olika minnesenheter: med en första nyckel  
35 kan omkopplingsanordningen inställas i ett första läge och med

en annan nyckel kan omkopplingsanordningen inställas i ett andra läge.

## Patentkrav

1. Datoranordning (8) innefattande:  
åtminstone två minnesenheter (10, 12),  
5 varvid var och en av dessa minnesenheter (10, 12) innefattar  
åtminstone två kontaktytor (14, 16; 18, 20) och är av den typ  
vars funktion i datoranordningen (8) åtminstone delvis bestäms  
av huruvida elektrisk förbindelse föreligger mellan dessa två  
10 kontaktytor (14, 16; 18, 20) hos minnesenheten (10, 12), och  
åtminstone en manuellt manövrerbar omkopplingsanordning (22)  
som medger inställning för slutning och brytning av åtminstone  
en förbindelse, kännetecknad av att  
nämnda omkopplingsanordning (22) är förbunden med de två  
15 kontaktytorna (14, 16) hos åtminstone en första (10) av minnes-  
enheterna, så att den elektriska förbindelsen mellan de två  
kontaktytorna (14, 16) hos nämnda första minnesenhet (10) är  
brytbar och slutbar med omkopplingsanordningen (22), varvid  
nämnda funktion av nämnda första minnesenhet (10) bestäms  
20 av om omkopplingsanordningen (22) är inställd för slutning eller  
brytning av den elektriska förbindelsen mellan de två kontakt-  
ytorna (14, 16) hos nämnda första minnesenhet (10).
2. Datoranordning (8) enligt krav 1, varvid nämnda omkopp-  
lingsanordning (22) innefattar en låsanordning (23) som begrän-  
25 sar möjligheten för en användare av datoranordningen (8) att  
inställa omkopplingsanordningen (22) för slutning eller brytning.
3. Datoranordning (8) enligt krav 2, varvid nämnda låsanord-  
ning (23) är utformad att manövreras medelst en nyckel (24).  
30
4. Datoranordning (8) enligt något av föregående krav, varvid  
nämnda omkopplingsanordning (22) även är förbunden med de  
två kontaktytorna (18, 20) hos en andra (12) av de åtminstone  
två minnesenheterna (10, 12), så att den elektriska förbindelsen  
35 mellan de två kontaktytorna (18, 20) hos den andra minnesen-  
heten (12) är brytbar och slutbar med omkopplingsanordningen

(22), varvid omkopplingsanordningen (22) är utformad att innefatta åtminstone ett första och ett andra inställningsläge, varvid vid det första inställningsläget den elektriska förbindelsen mellan de nämnda två kontaktytorna (14, 16) hos den första minnesenheten (10) är slutna, och varvid vid det andra inställningsläget den elektriska förbindelsen mellan de nämnda två kontaktytorna (18, 20) hos den andra minnesenheten (12) är slutna.

5 10 5. Datoranordning (8) enligt krav 3 och 4, varvid nämnda låsanordning (23) är inrättad så att nämnda första och andra inställningsläge innefattar två olika låspositioner inställbara med hjälp av nämnda nyckel (24).

15 6. Datoranordning (8) enligt krav 4 eller 5, varvid omkopplingsanordningen (22) är utformad att innefatta åtminstone även ett ytterligare inställningsläge, varvid i detta ytterligare inställningsläge den elektriska förbindelsen mellan de två respektive kontaktytorna (14, 16; 18, 20; 31, 32) med vilka omkopplingsanordningen är förbunden, är bruten hos samtliga minnesenheter (10, 12, 28) till vilka omkopplingsanordningen (22) är ansluten.

25 7. Datoranordning (8) enligt något av föregående krav, varvid nämnda första (10) och andra (12) minnesenheter är hårddiskenheter.

30 8. Datoranordning (8) enligt något av föregående krav, varvid nämnda två kontaktytor (14, 16; 18, 20) hos nämnda första (10) och andra (12) minnesenhet utgörs av två stift som är av den typ som är anordnade för att vara förbindbara med hjälp av en bygel.

35 9. Datoranordning (8) enligt något av föregående krav, innefattande åtminstone ett hölje (26), varvid nämnda omkopplings-

anordning (22) är anordnad vid höljet (26) och utformad att kunna inställas från höljets (26) utsida.

- 5 10. Datoranordning (8) enligt något av föregående krav, varvid datoranordningen (8) är inrättad så att inställning av omkopplingsanordningen (22) i ett första läge medför att den första (10) av nämnda minnesenheter är inkopplad för användning i datoranordningen (8) medan den andra (12) minnesenheten ej är inkopplad för användning.
- 10 11. Datoranordning (8) enligt något av föregående krav, varvid datoranordningen (8) är inrättad så att inställning av omkopplingsanordningen (22) i ett första läge medför att både den första (10) och den andra (12) minnesenheten är inkopplade för
- 15 användning i datoranordningen (8), varvid den första minnesenheten (10) fungerar som master och den eller de andra minnesenheterna (12) fungerar som slave.

Sammandrag

Uppfinningen avser en datoranordning (8) som innefattar åtminstone två minnesenheter (10, 12). Minnesenheterna (10, 12) är av den typ vars funktion i datoranordningen åtminstone delvis bestäms av huruvida elektrisk förbindelse föreligger mellan två kontaktytor (14, 16; 18, 20) hos minnesenheten (10, 12). Datoranordningen (8) innefattar också en omkopplingsanordning (22). Omkopplingsanordningen (22) är förbunden med de två kontaktytorna (14, 16) hos åtminstone en första (10) av minnesenheterna (10, 12). Den elektriska förbindelsen mellan de två kontaktytorna (14, 16) hos den första minnesenheten (10) är brytbar och slutbar med omkopplingsanordningen (22). Funktionen av den första minnesenheten (10) bestäms således av om omkopplingsanordningen (22) är inställd för slutning eller brytning av förbindelsen mellan kontaktytorna (14, 16).

20 (Fig 2)

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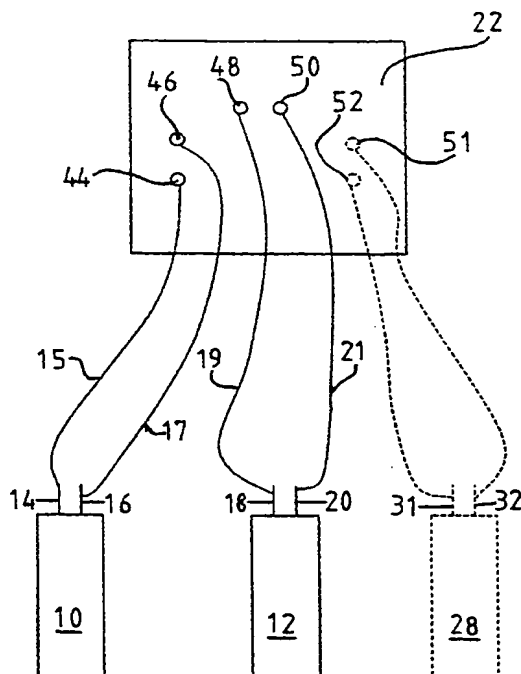
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(54) Title: COMPUTER SECURITY DEVICE FOR HARD DISC PROTECTION



(57) Abstract: The invention concerns a computer device (8) which comprises at least two memory units (10, 12). The memory units (10, 12) are of the kind the function of which in the computer device at least partly is determined by whether electric connection is the case between two contact surfaces (14, 16; 18, 20) of the memory unit (10, 12). The computer device (8) also comprises a switching device (22). The switching device (22) is connected with the two contact surfaces (14, 16) of at least a first (10) of the memory units (10, 12). The electric connection between the two contact surfaces (14, 16) of the first memory unit (10) may be opened and closed with the switching device (22). The function of the first memory unit (10) is thus determined by whether the switching device (22) is set for closure of opening of the connection between the contact surfaces (14, 16).

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## COMPUTER SECURITY DEVICE FOR HARD DISC PROTECTION

5

### BACKGROUND OF THE INVENTION AND PRIOR ART

The present invention concerns a computer device comprising:

- 10 at least two memory units, wherein each of these memory units comprises at least two contact surfaces and is of the kind the function of which in the computer device at least partly is determined by whether an electric connection is the case between these two contact surfaces of the memory unit, and at least one
- 15 manually operable switching device which allows for setting for closure and opening of at least one connection.

Such a known computer device may for example be a personal computer (PC). Such a PC comprises sometimes for example two

20 hard disc units which thus form two memory units. One hard disc unit may for example function as master and the other hard disc unit may function as slave. The hard disc units are often of the kind that comprises a plurality of contact pins which may be connected in pairs by means of a clamp (a so-called jumper). By connecting

25 two predetermined pins with a clamp, a hard disc unit may for example be defined as master. When the computer device comprises two such hard disc units, one is therefore often defined as master and the other as slave by means of said clamps. Further a computer device sometimes comprises a switching device which

30 allows for setting for closure and opening of a connection by means of a key. The connection which may be closed and opened may thereby simply be the line voltage to the computer device. This means that someone who does not have access to the key may not start or use the computer device.

35

A computer device with two hard disc units is known through the document CA 2 197 502. The document describes a computer

device with a switch. With the switch it may be selected which of the two hard disc units that is to be connected. The other hard disc unit can thereby not be used. For the switching one or two keys may be used. The switching device is relatively complicated and  
5 comprises a circuit which is connected to the common control and address line of the computer device and to two tristate buffers. These buffers are in their turn connected to the hard disc units via two matching circuits.

10 The document US-A-5 434 562 describes a computer device which may have a plurality of connected peripheral units. The document describes different manners in which a user may have access to the different units. In the simplest case the access to a unit is  
15 determined by closing or opening of the line voltage. In other cases a more complicated circuit is used for influencing different control signals to or from a control unit (controller).

The above-described devices are thus either relatively complicated or use only the switching of the line current or line voltage.

20 There is a need for the possibility to in simple manner being able to define the function of a memory unit in a computer. For example, it may be the case that for example children in a family use a computer in the absence of the parents. The children may thereby  
25 when playing cause problems in programs which are stored on the hard disc. Through the programs that the children use for example viruses or the like may infect the hard disc. It may thus be desirable to prevent people without a permission, for example the children, from using at least a certain hard disc in the computer.

### 30 SUMMARY OF THE INVENTION

The purpose of the present invention is to achieve a computer device which with a very simple construction makes the switching of  
35 memory units which are comprised in the computer device possible. For example, it may be advantageous if different users of the computer device use different memory units. An advantage with the

present invention is that thereby the contact surfaces which already exist on the memory units are used.

5 The purpose of the invention is achieved with the computer device as initially defined which is characterised in that said switching device is connected to the two contact surfaces of at least a first of the memory units, such that the electric connection between the two contact surfaces of said first memory unit may be opened and closed by the switching device, wherein said function of said first  
10 memory unit is determined by whether the switching device is set for closure or opening of the electric connection between the two contact surfaces of said first memory unit. The switching device thus directly controls the closure and the opening of the connection between the contact surfaces which are located on the memory  
15 unit. No complicated circuits are thereby needed between the switching device and the contact surfaces of the memory unit. Preferably the switching device is thus directly connected to said contact surfaces without there being any further circuit between the switching device and the contact surfaces.

20 According to an embodiment of the invention, said switching device comprises a locking device which limits the possibility for a user of the computer device to set the switching device for closure or opening. Hereby is made possible that only the one who has access  
25 to the locking device may determine whether a closure or an opening should be the case between the contact surfaces.

30 According to a further embodiment of the invention, said locking device is arranged to be operated by means of a key. Only someone who has access to the key may thus switch the switching device. Instead of a key it is also possible to arrange the locking device with some kind of code.

35 According to still another embodiment of the invention, said switching device is also connected to the two contact surfaces of a second of the at least two memory units, such that the electric connection between the two contact surfaces of the second memory

unit may be opened and closed with the switching device, wherein the switching device is arranged to comprise at least a first and a second setting position, wherein at the first setting position the electric connection between said two contact surfaces of the first memory unit is closed, and wherein at the second setting position the electric connection between said two contact surfaces of the second memory unit is closed. The two contact surfaces of the respective memory unit may thereby for example define which of the memory units that should be connected and that may be used in the computer device. When the switch is set according to a first setting position, the first memory unit may thus be used. When the switching device is set to a second setting position, the second memory unit may be used.

According to still another embodiment of the invention, said locking device is arranged such that said first and second setting position comprise two different locking positions which may be set by means of said key. This means that somebody who has access to the key may select which of the two setting positions that the switching device is to be set at. For example, when the parents leave the computer device they may with the help of the key set the switching device such that only a certain memory unit may be used. The children may then be free to use the computer device and thereby have access to this memory unit. Another memory unit, which usually is used by the parents, the children will thereby not have access to.

According to a further embodiment of the invention, the switching device is arranged to comprise at least also a further setting position, wherein in this further setting position the electric connection between the two respective contact surfaces with which the switching device is connected is open at all memory units to which the switching device is connected. With the switching device set in this further setting position, booting can be prevented from all memory units. When for example the locking device is arranged to be operated with a key, this means that someone who does not

have access to the key may not use the computer device if the switching device is set in this further setting position.

5 According to another embodiment of the invention, said first and second memory units are hard disc units. The function of the hard disc units in the computer device may thereby be determined by switching with the help of the switching device.

10 According to a further embodiment of the invention, said two contact surfaces of said first and second memory unit consist of two pins which are of the kind which are arranged to be connectable by means of a clamp. Such pins are for example arranged on hard disc units. These pins are thereby of a standard type and may be connected to each other by means of a clamp (a so-called jumper).

15 According to still another embodiment of the invention, the computer device comprises at least a housing, wherein said switching device is arranged at the housing and arranged to be able to be set from the outside of the housing. It is of course  
20 advantageous if the switching device in a simple manner may be operated by a user. An advantageous position of the switching device is thus at the housing of the computer device.

25 According to a further embodiment of the invention, the computer device is arranged such that setting of the switching device in a first position means that the first of said memory units is connected for use in the computer device while the second memory unit is not connected for use. Suitably, but not necessarily, the computer  
30 device is also arranged such that setting of the switching device in a second position means that the second memory unit is connected for use while the first memory unit is disconnected and may thus not be used.

35 According to still another embodiment of the invention, the computer device is arranged such that setting of the switching device in a first position means that both the first and the second memory unit are connected for use in the computer device, wherein

the first memory unit functions as master and the second memory unit or memory units function as slave. Preferably, the switching device may hereby comprise a second position, where also both the first and the second memory unit are connected for use in the computer device, but where the second memory unit functions as master and the first memory unit functions as slave. Suitably, the computer device may be arranged in this manner in that the switching device is connected to predetermined contact surfaces of the memory units and in that it has been defined in the set-up of the computer that one of the memory units functions as master and the other as slave.

#### SHORT DESCRIPTION OF THE DRAWINGS

The present invention will now be explained with the help of an embodiment given as an example and with reference to the appended drawings.

Fig 1 shows schematically a computer device according to the invention.

Fig 2 shows, also schematically, a switching device connected to memory units.

Fig 3 shows schematically a front view of an example of the switching device.

#### DETAILED DESCRIPTION OF AN EMBODIMENT OF THE INVENTION

Fig 1 shows schematically a computer device 8. The computer device 8 is in this case a personal computer (PC), but also other kinds of computers may be constructed in accordance with the present invention. The computer device 8 comprises a housing 26. A switching device 22 is arranged at the housing 26. The switching device 22 may thus be reached and set from the outside of the housing 26. The switching device 22 comprises a locking device 23. The locking device 23 is in this case of the kind which is operated with the help of a key 24. The locking device 23 thus requires that a

user has access to a key 24 in order to be able to set the switching device 22.

Fig 2 shows schematically two memory units 10, 12. These memory units 10, 12 constitute for example two hard disc units 10, 12. These hard disc units 10, 12 are suitably arranged inside the housing 26 of the computer device 8. It is also possible that the computer device 8 comprises more than two hard disc units 10, 12. A further such hard disc unit 28 is indicated by a broken line. Each of the memory units 10, 12 comprises at least two contact surfaces 14, 16 and 18, 20, respectively. These contact surfaces 14, 16, 18, 20 constitute preferably two pins which are of the kind which are arranged to be connectable by means of a clamp (a so-called jumper). Such pins 14, 16, 18, 20 are often of a standard kind and a memory unit is usually equipped with several such pairs of pins 14, 16, 18, 20 which are connectable with a clamp. By connecting a certain pair of such pins 14, 16 may for example be defined that the memory unit 10 constitutes the master unit in the computer device 8. Other pairs of pins may define other functions of the memory unit in question. The indicated memory unit 28 also has at least one such pair of pins 31, 32. The function of the memory unit 10, 12, 28 in the computer device 8 is thus determined at least partly by whether electric connection is the case between the two contact surfaces 14, 16; 18, 20; 31, 32.

Furthermore, it may also be defined in the set-up of the computer device 8 which function a certain memory unit 10, 12, 28 has in the computer device 8 when predetermined pins are connected to each other. For example, the computer device 8 may thereby be arranged such that if predetermined pins on a certain memory unit are connected to each other, then the memory unit in question is connected for use in the computer device while the other memory unit or memory units are disconnected and may thus not be used. Alternatively, it may be defined in the set-up of the computer that a certain memory unit, when predetermined pins of this memory unit are connected to each other, functions as master and the other memory units function as slave. This means, inter alia, that booting

of the computer device 8 is done from the memory unit which functions as master.

5 The computer device 8 also comprises a switching device 22. The switching device 22 may for example be of a so-called key switch kind. This means that the switching device 22 is operable with the help of the key 24. In Fig 2 is schematically shown how such a switching device 22 may function. The switching device 22 comprises a plurality of poles 42, 46, 48, 50, 51, 52. These poles  
10 are according to this embodiment arranged in pairs (by a pair of poles is in this application meant two contact surfaces of the switching device between which a connection may be closed or opened with the switching device). If the key 24 is set in a certain position, the poles 44 and 46 are connected to each other. If the  
15 key is set in a second position, the connection between the poles 48 and 50 is closed. The switching device 22 may also comprise further poles such as is indicated by 51 and 52. By manual setting with the help of the key 24, the switching device 22 may thus be set for closing and opening of the different pairs of poles 44, 46; 48, 50;  
20 51, 52.

The two poles 44, 46 of the switching device 22 are via lines 15, 17 connected to the two contact surfaces 14, 16 of a first 10 of the memory units. If the key 24 of the locking device 23 is set in a first  
25 position which closes the connection between the poles 44 and 46, then thereby also the connection between the pins 14, 16 of the memory unit 10 is closed. The function of the first memory unit 10 is thereby determined by whether the switching device 22 is set for closing or opening of the electric connection between the two pins  
30 14, 16 of the memory unit 10. According to the simplest embodiment of the invention, only the connecting lines 15, 17 are needed between the switching device 22 and a memory unit 10. This memory unit 10 may thereby thus be connected and disconnected with the help of the key 24.

35

According to the shown embodiment the poles 48, 50 of the switching device 22 are connected via lines 19, 26 to the pins 18,



20 of a second memory unit 12. The switching device 22 may thereby with the help of the key 24 be set in a second position where the poles 48, 50 are electrically connected to each other. This means that the pins 18, 20 of the second memory device 12 are connected to each other. When the key is set in this position, the connection between the poles 44, 46 is open and thereby also the connection between the pins 14, 16 is open.

By setting the key 24 in a first position thus for example only the memory unit 10 may be connected while the memory unit 12 is disconnected. By setting the key 24 in a second position, the memory unit 12 may be connected while the memory unit 10 is disconnected. Alternatively, one memory unit 10 may in a first position function as master while the other memory unit 12 functions as slave and vice versa in a second setting position. The switching device 22 may also comprise a further setting position. This further setting position may be such that when the switching device 22 is set in this position, the connection is open between the two pins 14, 16; 18, 20 and 31, 32, respectively, at all memory units 10, 12, 28 which are connected to the switching device 22. With the switching device 22 set in this further position for example no booting can be performed.

Fig 3 shows schematically how the locking device 23 of the switching device 22 may look to a user of the device. The switching device 22 may suitably be arranged in a holding member 25. This holding member 25 may for example be adapted to be arranged in a standard position in a computer. The device may be provided with a first indication mark 27 and a second indication mark 29. The two indication marks 27, 29 may differ from each other by for example having different colours, different patterns or comprise different symbols. In order to allow for a simple installation of the switching device 22, the lines 15, 17 and 19, 21, respectively, (see Fig 2) may suitably have corresponding indications to the indication marks 27, 29. The lines 15, 17, which lead to a memory unit 10, may form part of a common cable or may be twisted together. This cable or these lines 15, 17 may thereby for example comprise a certain colour

which corresponds to the colour of the first indication mark 27. In the corresponding manner, the lines 19, 21 may comprise another colour which corresponds to the colour of the second indication mark 29. The locking device 23 may also have a neutral position  
5 where the key 24 is set such as is shown in Fig 3. Possibly, a third indication mark 30 may indicate this neutral position. This neutral position may for example be the above described further setting position, in which the connection is open between the pins 14, 16; 18, 20; 31, 32 of all memory units 10, 12, 28.

10

When the key 24 is turned to the left, i.e. towards the first indication mark 27, suitably the lines 15, 17 which have the corresponding indication as the indication mark 27 are short-circuited. If the key 24 is turned to the right, i.e. towards the second indication mark 29,  
15 suitably the connection between the lines 19 and 21 which have the corresponding symbol to the second indication mark 29 is closed.

The present invention makes a very simple solution possible to the problem to by means of a lock being able to define the function of a  
20 certain memory unit, for example a hard disc unit. Since the contact surfaces, i.e. the pins 14, 16, 18, 20, already are arranged on the hard disc unit, it is according to the invention only necessary to draw lines 15, 17, 19, 21 from these pins 14, 16, 18, 20 to the switching device 22. No further electronic circuitry is necessary  
25 between the pins 14, 16, 18, 20 and the switching device 22.

As an example of an application of the invention may be mentioned that it may be the case that different users, for example colleagues at work, who use the same computer, want to use different hard  
30 disc units in order not to risk to manipulate each others programs. According to the invention, it may thus in a simple manner with the help of the switching device be set which of the hard disc units that is to be connected. The different users may thereby use their own hard discs and therefore do not risk causing any changes in that  
35 which is stored on the hard discs of the other users.

The present invention is not limited to the shown embodiment but may be varied and modified within the scope of the following claims. As has been described above, it is possible that the locking device comprises a setting position where none of the memory units is connectable. Furthermore, the locking device may be arranged to be operated with different keys which give access to different memory units: with a first key the switching device may be set in a first position and with another key the switching device may be set in a second position.

### Claims

1. A computer device (8) comprising:  
at least two memory units (10, 12), wherein each of these memory  
5 units (10, 12) comprises at least two contact surfaces (14, 16; 18,  
20) and is of the kind the function of which in the computer device  
(8) at least partly is determined by whether an electric connection is  
the case between these two contact surfaces (14, 16; 18, 20) of the  
memory unit (10, 12), and  
10 at least one manually operable switching device (22) which allows  
for setting for closure and opening of at least one connection,  
characterised in that  
said switching device (22) is connected to the two contact surfaces  
(14, 16) of at least a first (10) of the memory units, such that the  
15 electric connection between the two contact surfaces (14, 16) of  
said first memory unit (10) may be opened and closed by the  
switching device (22), wherein said function of said first memory  
unit (10) is determined by whether the switching device (22) is set  
for closure or opening of the electric connection between the two  
20 contact surfaces (14, 16) of said first memory unit (10).
2. Computer device (8) according to claim 1, wherein said  
switching device (22) comprises a locking device (23) which limits  
the possibility for a user of the computer device (8) to set the  
25 switching device (22) for closure or opening.
3. Computer device (8) according to claim 2, wherein said locking  
device (23) is arranged to be operated by means of a key (24).
- 30 4. Computer device (8) according to any one of the preceding  
claims, wherein said switching device (22) is also connected to the  
two contact surfaces (18, 20) of a second (12) of the at least two  
memory units (10, 12), such that the electric connection between  
the two contact surfaces (18, 20) of the second memory unit (12)  
35 may be opened and closed with the switching device (22), wherein  
the switching device (22) is arranged to comprise at least a first and  
a second setting position, wherein at the first setting position the

electric connection between said two contact surfaces (14, 16) of the first memory unit (10) is closed, and wherein at the second setting position the electric connection between said two contact surfaces (18, 20) of the second memory unit (12) is closed.

5

5. Computer device (8) according to claim 3 and 4, wherein said locking device (23) is arranged such that said first and second setting position comprise two different locking positions which may be set by means of said key (24).

10

6. Computer device (8) according to claim 4 or 5, wherein the switching device (22) is arranged to comprise at least also a further setting position, wherein in this further setting position the electric connection between the two respective contact surfaces (14, 16; 18, 20; 31, 32) with which the switching device is connected, is open at all memory units (10, 12, 28) to which the switching device (22) is connected.

15

7. Computer device (8) according to any one of the preceding claims, wherein said first (10) and second (12) memory units are hard disc units.

20

8. Computer device (8) according to any one of the preceding claims, wherein said two contact surfaces (14, 16; 18, 20) of said first (10) and second (12) memory unit consist of two pins which are of the kind which are arranged to be connectable by means of a clamp.

25

9. Computer device (8) according to any one of the preceding claims, comprising at least a housing (26), wherein said switching device (22) is arranged at the housing (26) and arranged to be able to be set from the outside of the housing (26).

30

10. Computer device (8) according to any one of the preceding claims, wherein the computer device (8) is arranged such that setting of the switching device (22) in a first position means that the first (10) of said memory units is connected for use in the computer

35

device (8), while the second (12) memory unit is not connected for use.

11. Computer device (8) according to any one of the preceding  
5 claims, wherein the computer device (8) is arranged such that  
setting of the switching device (22) in a first position means that  
both the first (10) and the second (12) memory unit are connected  
for use in the computer device (8), wherein the first memory unit  
(10) functions as master and the second memory unit or memory  
10 units (12) function as slave.

1/3

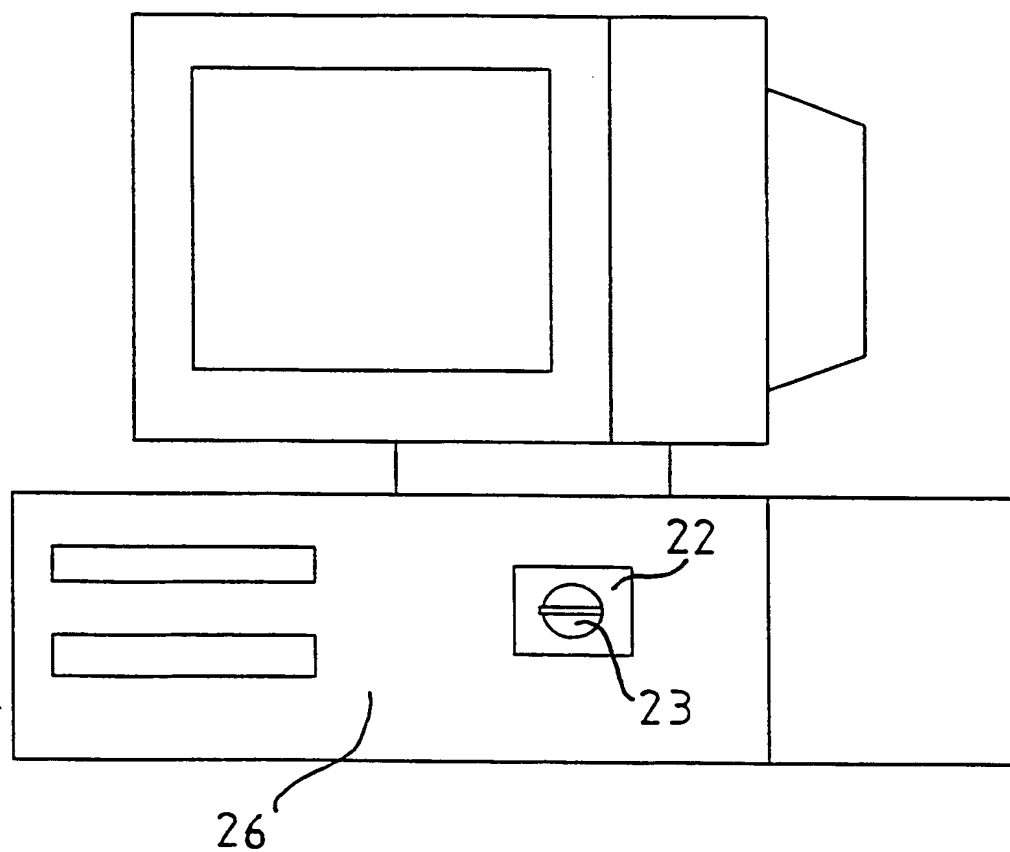
8  
↓

FIG 1





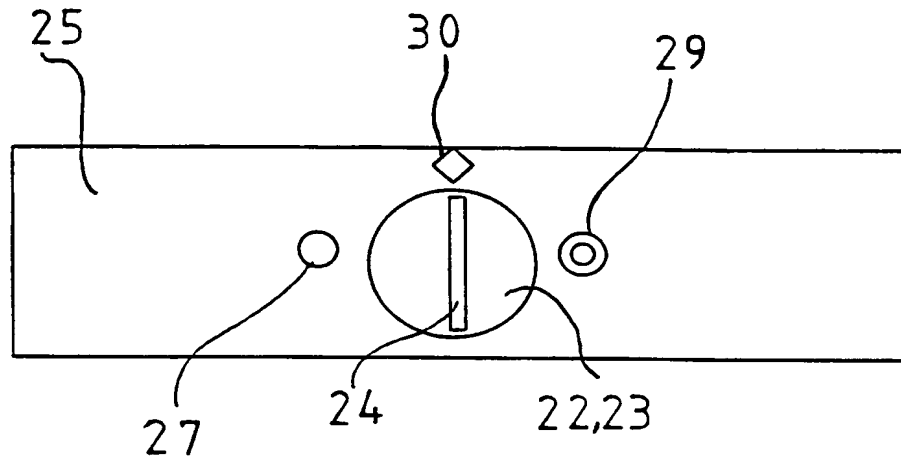


FIG 3

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 00/01567

## A. CLASSIFICATION OF SUBJECT MATTER

IPC7: G06F 1/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2279163 A (BOXWARE LIMITED), 21 December 1994 (21.12.94), page 3, line 24 - line 35; page 5, line 27 - line 38, claims 6,7, abstract --	1-11
X	US 4734851 A (DIRECTOR, DENNIS), 29 March 1988 (29.03.88), column 2, line 37 - column 3, line 30, figures 2,3, claims 1-3, abstract --	1-11
A	GB 2201992 A (LUCAS INDUSTRIES PUBLIC LIMITED COMPANY), 14 Sept 1988 (14.09.88), figures 1-5, claim 1, abstract --	2-3,5



Further documents are listed in the continuation of Box C.



See patent family annex.

## \* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

27 October 2000

Date of mailing of the international search report

02 -11- 2000

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 00/01567

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 9000771 A1 (VERWEYEN GMBH), 25 January 1990 (25.01.90), page 2, line 22 - page 5, line 31, figure 1, claim 1  --	1-11
A	JP 8203257 (MITSUBISHI ELECTRIC CORP.) 1996-08-09 (abstract) World Patents Index (online). London, U.K.: Derwent Publications, Ltd (retrieved on 2000-10-27). Retrieved from: EPO WPI Database. DW199642, Accession No. 1996-417431. See the whole document  -- -----	1-11

# INTERNATIONAL SEARCH REPORT

Information on patent family members

03/10/00

International application No.

PCT/SE 00/01567

Patent document cited in search report			Publication date	Patent family member(s)	Publication date
GB	2279163	A	21/12/94	GB 9312332 D	00/00/00
US	4734851	A	29/03/88	US RE33328 E	11/09/90
GB	2201992	A	14/09/88	GB 8705906 D	00/00/00
WO	9000771	A1	25/01/90	AT 87107 T	15/04/93
				AU 3848289 A	05/02/90
				BG 50619 A	15/09/92
				DE 3914239 A	11/01/90
				DE 58903841 D	00/00/00
				EP 0428528 A,B	29/05/91
				SE 0428528 T3	

## PATENT COOPERATION TREATY

PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

REC'D 09 NOV 2001

WIPO PCT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PCT 51547 si/MW	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/SE00/01567	International filing date ( <i>day month year</i> ) 10.08.2000	Priority date ( <i>day month year</i> ) 10.08.1999
International Patent Classification (IPC) or national classification and IPC <sup>7</sup> G06F 1/00		
Applicant Danielsson, Niklas		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  22.02.2001	Date of completion of this report  30.10.2001
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. 08-667 72 88	Authorized officer  Pär Heimdahl /OGU Telephone No. 08-782 25 00

**I. Basis of the report****1. With regard to the elements of the international application:\***

- ☐ the international application as originally filed
- ☒ the description:  
pages 1-12 , as originally filed  
pages \_\_\_\_\_ , filed with the demand  
pages \_\_\_\_\_ , filed with the letter of \_\_\_\_\_
- ☒ the claims:  
pages \_\_\_\_\_ , as originally filed  
pages \_\_\_\_\_ , as amended (together with any statement) under article 19  
pages \_\_\_\_\_ , filed with the demand  
pages 12-14 , filed with the letter of 07.09.2001
- ☒ the drawings:  
pages 1-3 , as originally filed  
pages \_\_\_\_\_ , filed with the demand  
pages \_\_\_\_\_ , filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_ , as originally filed  
pages \_\_\_\_\_ , filed with the demand  
pages \_\_\_\_\_ , filed with the letter of \_\_\_\_\_

**2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.**

These elements were available or furnished to this Authority in the following language English which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☒ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

**3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:**

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

**4. ☐ The amendments have resulted in the cancellation of:**

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheet/fig \_\_\_\_\_

**5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2 (c)).\*\***

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	<u>1-9</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-9</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-9</u>	YES
	Claims		NO

**2. Citations and explanations (Rule 70.7)****CITATIONS**

The examination process has revealed the following documents, which represent the general state of the art:

D1: GB 2 279 163 A  
D2: US 4 734 851 A  
D3: GB 2 201 992 A  
D4: WO 90 00 771 A1  
D5: JP 8 203 257

**STATEMENT**

This IPER concerns claims 1-9, amended on 2001-09-07.

From D1 is a computer device comprising a memory unit known, see abstract. This memory unit comprises at least two contact surfaces. A switching device is connected with the two contact surfaces, see page 3, line 27-35. The electric connection which determine the function of the memory units allows for setting for closure and opening of at least one connection, see claims 6 and 7.

The computer device in D1 also has a locking device, limiting the access to a memory unit for an unauthorised user, see page 5, line 27-38. The lock is operated by a key. The locked memory device is a hard disc. Further, the computer device comprises housing. The switching device is attached to the housing and arranged to be operated from the outside of the housing, see page 5, line 27-38.

To use two hard discs in the computer device known from D1 and let one of them be a master and the other slave is obvious to a person skilled in the art.

.../...

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Box V.

However, the invention as defined by claims 1-9 is considered to differ from the art presented in D1 in such a way that document D1 has to be considered to express the general state of the art only, not being of particular relevance. Thus, the invention according to claims 1-9 is considered to be new, to involve an inventive step and to be industrial applicable.

From document D2 is a computer device comprising a memory unit known, see abstract. The memory unit comprises two contact surfaces. A switching device is connected with the two contact surfaces, see page 3, first paragraph. The electric connection, which determines the function of the memory units, allows for setting for closure and opening of at least one connection.

The computer device in D2 also has a locking device, limiting the access to a memory unit for an unauthorised user, see page 3, line 24-27 and claim 1. The lock is operated by a key. The locked memory device is a hard disc. Further, the computer device comprises housing. The switching device is attached to the housing and arranged to be operated from the outside of the housing, see figures 1-3.

The invention as described through claims 1-9 is considered to differ from the cited document D2 in such a way that the invention according to claims 1-9 has to be considered novel, to involve an inventive step and to be industrial applicable.

Documents D3-D5, cited in the International Search Report, constitute the general state of the art and are not considered to be of particular relevance.



Claims

1. A computer device (8) comprising:  
at least two memory units (10, 12), wherein each of these memory  
5 units (10, 12) comprises at least two contact surfaces (14, 16; 18,  
20) and is of the kind the function of which in the computer device  
(8) at least partly is determined by whether an electric connection is  
the case between these two contact surfaces (14, 16; 18, 20) of the  
memory unit (10, 12), and  
10 at least one manually operable switching device (22) which allows  
for setting for closure and opening of at least one connection,  
characterised in that  
said switching device (22) is connected to the two contact surfaces  
(14, 16) of at least a first (10) of the memory units, such that the  
15 electric connection between the two contact surfaces (14, 16) of  
said first memory unit (10) may be opened and closed by the  
switching device (22), wherein said function of said first memory  
unit (10) is determined by whether the switching device (22) is set  
for closure or opening of the electric connection between the two  
20 contact surfaces (14, 16) of said first memory unit (10), wherein  
said switching device (22) comprises a locking device (23) which  
limits the possibility for a user of the computer device (8) to set the  
switching device (22) for closure or opening, and wherein said two  
contact surfaces (14, 16; 18, 20) of said first (10) and second (12)  
25 memory unit consist of two jumper-pins which are provided on said  
memory units (10, 12) and which are of the kind which are arranged  
to be connectable by means of a clamp.
2. Computer device (8) according to claim 1, wherein said locking  
30 device (23) is arranged to be operated by means of a key (24).
3. Computer device (8) according to any one of the preceding  
claims, wherein said switching device (22) is also connected to the  
two contact surfaces (18, 20) of a second (12) of the at least two  
35 memory units (10, 12), such that the electric connection between  
the two contact surfaces (18, 20) of the second memory unit (12)  
may be opened and closed with the switching device (22), wherein

the switching device (22) is arranged to comprise at least a first and a second setting position, wherein at the first setting position the electric connection between said two contact surfaces (14, 16) of the first memory unit (10) is closed, and wherein at the second setting position the electric connection between said two contact surfaces (18, 20) of the second memory unit (12) is closed.

4. Computer device (8) according to claim 2 and 3, wherein said locking device (23) is arranged such that said first and second setting position comprise two different locking positions which may be set by means of said key (24).

5. Computer device (8) according to claim 3 or 4, wherein the switching device (22) is arranged to comprise at least also a further setting position, wherein in this further setting position the electric connection between the two respective contact surfaces (14, 16; 18, 20; 31, 32) with which the switching device is connected, is open at all memory units (10, 12, 28) to which the switching device (22) is connected.

6. Computer device (8) according to any one of the preceding claims, wherein said first (10) and second (12) memory units are hard disc units.

7. Computer device (8) according to any one of the preceding claims, comprising at least a housing (26), wherein said switching device (22) is arranged at the housing (26) and arranged to be able to be set from the outside of the housing (26).

8. Computer device (8) according to any one of the preceding claims, wherein the computer device (8) is arranged such that setting of the switching device (22) in a first position means that the first (10) of said memory units is connected for use in the computer device (8), while the second (12) memory unit is not connected for use.

9. Computer device (8) according to any one of the preceding claims, wherein the computer device (8) is arranged such that setting of the switching device (22) in a first position means that both the first (10) and the second (12) memory unit are connected for use in the computer device (8), wherein the first memory unit (10) functions as master and the second memory unit or memory units (12) function as slave.
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